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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,895	06/14/2005	Joachim Berthold	FR 6081 (US)	5147
34872	7590	11/14/2008		
Basell USA Inc. Delaware Corporate Center II 2 Righter Parkway, Suite #300 Wilmington, DE 19803			EXAMINER MCDOWELL, SUZANNE E	
			ART UNIT	PAPER NUMBER
			1791	
			MAIL DATE	DELIVERY MODE
			11/14/2008 PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/538,895

**Applicant(s)**

BERTHOLD ET AL.

**Examiner**

Suzanne E. McDowell

**Art Unit**

1791

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moriguchi et al. (US Patent 4,536,550). Moriguchi et al. teaches a multimodal polyethylene composition with a density of 0.935-0.965 g/cm<sup>3</sup> (column 9, line 66-column 10, line 1) which comprises 35-45% by weight of low molecular mass polyethylene polymer A (column 2, lines 52-60 and Table 2), 34-44% by weight of a high molecular mass copolymer B made from ethylene and a first 1-olefin comonomer with from 4 to 8 carbons (column 2, lines 52-60, column 3, lines 28-29, and Table 2), and from 18-26% by weight of an ultrahigh molecular mass copolymer C containing a second 1-olefin comonomer (column 2, lines 52-58, column 3, lines 8-10 and Table 2). Moriguchi et al. further teaches that the MFR of 0.5-3.0 dg/min (column 10, lines 3-5) for injection blow molding, and an MFR of from 0.005-1 dg/min for blow or extrusion molding. Moriguchi et al. does not teach that the stress crack resistance is 150-220 hours. It is well known in the art to maximize the stress crack resistance, in order to form more durable products. It would have been obvious to a person of ordinary skill in the art to use routine experimentation to modify the composition taught by Moriguchi et al. in order to result in the desired stress crack resistance.

Regarding claim 2, Moriguchi et al. does not teach the specific amounts of comonomers. However, as evidenced by MPEP §2144.05, differences in concentration do not support patentability,

absent a showing of criticality. It would have been obvious to a person of ordinary skill in the art to use routine experimentation to optimize the amount of comonomer in order to obtain the desired characteristics in the finished product, such as cost, durability, appearance, etc.

Regarding claim 3, Moriguchi et al. teaches the instantly claimed comonomers (column 2, lines 56-58).

Regarding claim 5, Moriguchi et al. does not teach the instantly claimed characteristics. It is well known in the art to maximize characteristics such as impact strength, in order to form more durable products. It would have been obvious to a person of ordinary skill in the art to use routine experimentation to optimize the composition taught by Moriguchi et al. in order to result in the desired characteristics in the finished product, such as cost, durability, appearance, etc.

3. Claims 4 and 6-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moriguchi et al. (US Patent 4,536,550) in view of Berthold et al. (US Patent 6,713,561). Moriguchi et al. teaches a multimodal polyethylene composition with a density of 0.935-0.965 g/cm<sup>3</sup> (column 9, line 66-column 10, line 1), and a MFR of 0.5-3.0 dg/min (column 10, lines 3-5), which comprises 35-45% by weight of low molecular mass polyethylene polymer A (column 2, lines 52-60 and Table 2), 34-44% by weight of a high molecular mass copolymer B made from ethylene and a first 1-olefin comonomer with from 4 to 8 carbons (column 2, lines 52-60, column 3, lines 28-29, and Table 2), and from 18-26% by weight of an ultrahigh molecular mass copolymer C containing a second 1-olefin comonomer (column 2, lines 52-58, column 3, lines 8-10 and Table 2). Regarding claims 4, 7 and 8, Moriguchi et al. does not teach the instantly claimed viscosities. Regarding claim 6, Moriguchi et al. does not teach the instantly claimed method of polymerization in three stages, although Moriguchi et al. does teach the organoaluminum

catalyst (Example 1-1). Berthold et al. teaches a multimodal polyethylene molding composition which is obtained by polymerization of monomers in three phases using a Ziegler catalyst (Example 1) in suspension at temperatures of 20-120°C, where the viscosity  $VN_1$  is 55-100  $\text{cm}^3/\text{g}$  (Table 2) and viscosity  $V_{\text{tot}}$  is 306-392  $\text{cm}^3/\text{g}$  (Table 2). It would have been obvious to a person of ordinary skill in the art to use the method of polymerization taught by Berthold et al. to modify the method taught by Moriguchi et al. in order to obtain the desired polymer with optimum characteristics. The motivation to use the teachings of Berthold et al. to modify Moriguchi et al. is that both are in the same field of endeavor, that of making multimodal polyethylene products.

Further regarding claim 6, and regarding claim 10, Moriguchi et al. does not teach that the stress crack resistance is 150-220 hours. It is well known in the art to maximize the stress crack resistance, in order to form more durable products. It would have been obvious to a person of ordinary skill in the art to use routine experimentation to modify the composition taught by Moriguchi et al. in order to result in the desired stress crack resistance.

Regarding claim 9, Moriguchi et al. does not teach the instantly claimed viscosity numbers. However, the numbers clearly fall between the first and final numbers taught by Berthold et al. Therefore, the method taught by Br would of necessity encompass the instantly claimed viscosity numbers as the polymerization progressed between the stages.

Further regarding claim 10, Moriguchi et al. does not teach the blow molding steps as instantly claimed. Berthold et al. teaches blow molding the polyethylene composition by plasticizing in an extruder at a temperature of 200-250°C, extruding, blow molding, and cooling (column 10, lines 3-8). It would have been obvious to a person of ordinary skill in the art to use the method taught by Berthold

et al. to modify the method taught by Moriguchi et al. in order to form a finished product from the polyethylene composition.

### ***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Suzanne E. McDowell whose telephone number is (571) 272-1205. The examiner can normally be reached on Monday and Thursday 8:30-4, Wednesday 6-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Suzanne E. McDowell/  
Primary Examiner, Art Unit 1791